

PATENT COOPERATION TREATY

PCT

REC'D 23 MAR 2001

WIPO PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

14

Applicant's or agent's file reference 55.0206	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP99/03946	International filing date (day/month/year) 03/06/1999	Priority date (day/month/year) [03/06/1999] ^A
International Patent Classification (IPC) or national classification and IPC E21B33/138		
Applicant SOFITECH N.V. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 5 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 22/12/2000	Date of completion of this report 21.03.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Str mmen, H Telephone No. +49 89 2399 7345 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP99/03946

I. Basis of the report

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).):*

Description, pages:

1-7 as originally filed

Claims, No.:

1-9 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

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(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-9
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-9
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-9
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

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EXAMINATION REPORT - SEPARATE SHEET**

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Reference is made to the following documents:

D1: WO9428085

D2: WO9856869

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

V-1 D1, which is considered the closest prior art, discloses the subject-matter of claim 1 as follows:

A plugging fluid for plugging a subterranean formation zone surrounding a drill hole (page 1, l. 5-7) consisting of an emulsion comprising:

- a) an oil phase (p. 4, l.10) containing
 - i. an oil (p. 4, l. 11)
 - ii. an emulsifier (p. 9, l. 23-25)
- b) an aqueous phase containing (p. 5, l. 3)
 - i. water (p. 5, l. 3)
 - ii. a polysaccharide (p. 3, l. 1)

Wherein the oil to water volume ratio ranges from 20: 80 to 25: 75 (page 5).

The apparatus according to claim 1, therefore differs with respect to D1 in that:

- a) 2.4-4 kg of cement per liter of oil is used as the crosslinking agent.
- b) The claimed range of 12-16 g of a polysaccharide per liter of water is not anticipated by the cited prior art.

The apparatus according to claim 1 is therefore new and the claim meets the novelty requirements of Article 33(2) PCT.

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V-2 The problem to be solved by distinguishing feature a) is related to improving the strength of the emulsion. D2, which in claim 10 discloses the use of cement as a crosslinking agent, states that a class G cement gives the emulsion a high thermal stability, see page 5, lines 13-16. It is however not made obvious by any of the cited prior art to utilise such large quantities of crosslinking agent per liter of oil, the difference being a factor 1000. Distinguishing feature a) does therefore, in it self, involve an inventive step.

As at least distinguishing feature a) of claim 1 involves an inventive step, the subject-matter of said claim meet the requirements of Article 33(3) PCT.

V-3 As claims 2 to 5 depend upon an inventive claim 1, said claims are also considered to involve an inventive step Article 33(3).

V-4 As the plugging fluid of claim 1 is new and inventive also the method of preparing such fluid is new and inventive. Claim 6 therefore also meets the requirements of Article 33(2) and (3) PCT.

V-5 With reference to what was said above, also the method of using the plugging fluid is new and inventive. Claims 7-9 therefore also meets the requirements of Article 33(2) and (3) PCT.

Re Item VII

C rtain defects in the international application

VII-1 The independent claims are not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from D1 being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

VII-2 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in D2 is not mentioned in the description, nor is this document identified therein.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 55.0206	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 99/03946	International filing date (day/month/year) 03/06/1999	(Earliest) Priority Date (day/month/year)
Applicant SOFITECH N.V. et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 99/03946

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 E21B33/138 E21B43/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 E21B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 94 28085 A (NORSKE STATS OLJESELSKAP ;SUNDE EGIL (NO); JOHNSEN HANS KONRAD (NO) 8 December 1994 (1994-12-08) cited in the application page 2, line 34 -page 3, line 21 page 4, line 10 -page 5, line 38 page 9, line 38 -page 11, line 2 claims 1-8,11,12,14-22 ---	1-3,5-8
Y	WO 98 56869 A (QUINN DAVID ;SUNDE EGIL (NO); NORSKE STATS OLJESELSKAP (NO)) 17 December 1998 (1998-12-17) page 3, line 12 -page 5, line 38 claims 1-5,7-10,13 --- -/--	1-8

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

1 February 2000

Date of mailing of the international search report

08/02/2000

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INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 98 56868 A (OLSEN HAAVARD ;SUNDE EGIL (NO); NORSKE STATS OLJESELSKAP (NO)) 17 December 1998 (1998-12-17) page 3, line 8 -page 5, line 37 claims 1-5,7-10,13,17 ----	1-8
Y	US 3 948 672 A (B.G HARNSBERGER) 6 April 1976 (1976-04-06) column 2, line 52 -column 3, line 33 column 4, line 55 -column 6, line 13 ----	1-3,5
Y	WO 98 56870 A (OLSEN HAAVARD ;SUNDE EGIL (NO); NORSKE STATS OLJESELSKAP (NO)) 17 December 1998 (1998-12-17) page 3, line 12 -page 5, line 35 claims 1-5,8,9,12 -----	1-8

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 99/03946

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9428085	A	08-12-1994	NO 931954 A	29-11-1994
			AU 681673 B	04-09-1997
			AU 6938594 A	20-12-1994
			BR 9406672 A	30-01-1996
			CA 2163435 A	08-12-1994
			CN 1126486 A	10-07-1996
			EP 0738310 A	23-10-1996
			US 5919739 A	06-07-1999
WO 9856869	A	17-12-1998	NO 972704 A	14-12-1998
			AU 8359598 A	30-12-1998
WO 9856868	A	17-12-1998	NO 972703 A	14-12-1998
			AU 8359498 A	30-12-1998
US 3948672	A	06-04-1976	US 3861467 A	21-01-1975
WO 9856870	A	17-12-1998	NO 972705 A	14-12-1998
			AU 8041298 A	30-12-1998